processes, in contrast are prepared by first drying the metal particles before mixing with the solvent and binder, thereby promoting the formation of aggregates of the metal particles.

The rejection of the claims under 35 U.S.C. § 102(e) over Yamana or Nakamura, or under 35 U.S.C. § 103(a) over the combination of Yamana and Nakamura is respectfully traversed. Neither Yamana nor Nakamura describe or suggest a composite substance or conductive paste prepared by the process of the present invention, nor do they describe or suggest a composite substance or conductive paste comprising a mixture of two solvents and/or a surface active agent.

The composite substance of the present invention comprises a solvent and metal or metal compound particles wetted by the solvent. The composite substance is prepared by mixing the solvent with *undried* metal or metal-compound particles (i.e., particles which are still wet with water from the particle forming process). As a result, the solvent wets the surface of the metal particles, thereby keeping the metal particles separate, and preventing aggregation (present specification at page 5, lines 4-21). In conventional processes for preparing conductive pastes, metal powder prepared by various methods is washed with water and *dried* (present specification at page 1, line 26 to page 2, line 14). The *dried* metal particles tend to aggregate, thereby providing a conductive paste containing relatively large aggregates which cause defects when used to prepare, e.g., electronic components (present specification at page 2, lines 15-27). Thus, the composite substance of the present invention, and the conductive paste prepared from the composite substance of the present invention have improved properties over those prepared by conventional methods, because they lack the metal powder aggregates found in conventionally prepared conductive pastes.

The composite substance and conductive paste of the present invention may also include a second solvent component which is compatible with the first solvent used to wet the metal

particles, and which is also miscible water. This second solvent helps to remove residual water from the surface of the metal particle (present specification at page 6, lines 19-26). In addition the composite substance and conductive paste of the present invention may also include a surface active agent to enhance wetting of the solvent to the metal particles (page 6, lines 7-18).

Although both Yamana and Nakamura describe conductive pastes comprising the combination of a powdered metal, a binder, and a solvent (Yamana at column 5, line 52; Nakamura at column 5, lines 30-35), Yamana and Nakamura are silent in regard to how the metal powder is prepared and subsequently mixed with the solvent and organic binder. Thus, neither Yamana nor Nakamura describe or suggest mixing a solvent with *undried* particles, as in the present invention. In addition, neither Yamana nor Nakamura recognize the importance of mixing an *undried* metal or metal-compound powder with a solvent to prevent aggregation of the particles. In contrast, as discussed above, the claimed composite substance and conductive paste are prepared by a method which is different from the conventional method, and provides a composite substance and conductive paste in which the metal or metal-compound particles, unlike compositions made by the conventional process, do not tend to aggregate. Thus Yamana and Nakamura neither anticipate nor suggest preparing composite substances or conductive pastes by mixing *undried* particles with a solvent, and therefore fail to recognize the importance of preparing a composite substances or conductive paste with *undried* particles. Moreover, since process of the present invention (i.e., mixing undried particles with the solvent) provides unaggreggated particles, the composite substance or conductive paste of the present invention are different from those prepared by the conventional process, and are therefore reasonably different from those of Yamana and Nakamura. Accordingly, Applicants respectfully request withdrawal of the rejections.

Furthermore, neither Yamana nor Nakamura suggest or describe conductive pastes which comprise either a mixture of two solvents, one of which is miscible with water and the other solvent, or compositions which contain a surface active agent. Rather, both Yamana and Nakamura describe only compositions comprising "*a* solvent" (emphasis added; Yamana at col. 5, line 51; Nakamura at col. 5, line 33), and are completely silent in regard to surface active agents. Thus, Yamana and Nakamura reasonably only describe or suggest compositions having a single solvent, and fail to describe or suggest compositions having a surface active agent. Moreover, neither Yamana nor Nakamura describe any solvent which has the properties of the "second solvent" of the present invention (i.e., miscibility in the first solvent, and with water). However, as discussed above, the second solvent and the surface active agent of the present invention improve the properties of the claimed composite substance or conductive paste by inhibiting aggregation of the particles. Thus, not only do Yamana and Nakamura fail to describe compositions having the second solvent and surface active agent of the claimed compositions, the claimed compositions would reasonably be expected to have superior properties compared to those of Yamana and Nakamura. Accordingly, Applicants respectfully request withdrawal of the rejections.

The rejection of the claims under 35 U.S.C. § 112, second paragraph, is obviated by appropriate amendment. Claims 4, 9, and 14 no longer recite the phrase "the content." Accordingly, Applicants respectfully request withdrawal of the rejection.

RESPONSE TO REQUIREMENT FOR RESTRICTION

Applicants affirm the election of Group I, Claims 1-20, drawn to a composite substance.

The Office has required restriction in the present application as follows:

Group I: Claims 1-20, drawn to a composite substance;

Group II: Claims 21-22, drawn to an electronic component; and

Group III: Claims 23-42, drawn to a method for manufacturing a composite substance.

Restriction is only proper if the claims of the restricted groups are either independent or patentably distinct. The burden of proof is on the Office to provide reasons and/or examples to support any conclusion with regard to patentable distinctness. MPEP § 803.

Applicants respectfully traverse the Requirement for Restriction on the grounds that the Office has not provided adequate reasons and/or examples to support a conclusion of patentable distinctness between the identified groups.

The Office suggests that the inventions of Groups II and I are related as combination and subcombination, and are therefore distinct. The Office alleges that the combination (e.g. an electronic component) does not require the use of the subcombination (e.g. the composite substance of the present invention) because "one can use a conductive paste which includes an inorganic binder." The Office also alleges that the subcombination (i.e. the composite substance) has "separate utility such as an identification document." However, Applicants note that the composite substance of the present invention "comprises" a solvent and metal particles, and therefore may include an inorganic binder, and the conductive paste of the present invention also "comprises" an organic binder, a solvent, and metal particles, and therefore also may include an inorganic binder. Thus, the Office's basis for alleging that the composite substance or conductive paste of the present invention is not required to prepare the invention of Group II, is incorrect, because the composition exemplified by the Office falls within the scope of the claims of Group I. In addition, the Office states that the subcombination (i.e. Group I) has separate utility as an identification document. However, Applicants fail to understand how a composite substance comprising metal particles wetted with a solvent, or a conductive paste comprising the

combination of metal particles wetted with a solvent and an organic binder, could possibly be an identification document. Accordingly, Applicants respectfully submit that the Office has failed to provide adequate reasons to support the requirement for restriction. Applicants therefore respectfully request withdrawal of the requirement.

The Office has also characterized the inventions of Groups III and I as related as process of making and product made. Citing MPEP § 806.05(f), the Office concludes that the "composite substance as claimed can be made by a different process such as soak [sic; soaking] the metal particles in the solvent for a while then transfer [sic; transferring] the (wetted) metal particles to an organic binder." In addition, the Office states that the process can be used to make a different product such as a "chocolate chip cookie dough." However, the Office has not shown how the "different process" alleged is materially different from the claimed process. Furthermore, Applicants note that the claimed process of blending solvents, organic binders, and metal or metal-compound particles is completely different from a process of making "chocolate chip cookie dough", since the claimed process obviously provides an *in*edible composition, whereas the process exemplified by the Office provides an edible composition. Thus, the process as claimed could not reasonably be used to make chocolate chip cookie dough, as alleged. Accordingly, Applicants respectfully request withdrawal of the requirement.

Finally, Applicants note that MPEP § 821.04 states, "If Applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims which depend from or otherwise include all the limitations of the allowable product claim will be rejoined." Applicants respectfully submit that should the elected group be found allowable, the non-elected claims should be rejoined.

Accordingly, and for the reasons stated above, Applicants respectfully request withdrawal of the rejections and requirements for restriction. Early notification thereof is respectfully requested.

Respectfully submitted,

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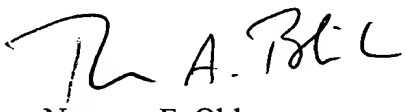

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IN THE CLAIMS

Please amend the claims as follows:

--1. (Amended) A composite substance for forming a conductive paste, comprising:

a solvent [being] which is compatible with an organic component included in said conductive paste; and

metal particles wetted by said solvent,

wherein said composite substance is prepared by mixing the solvent with undried metal particles.

3. (Amended) The composite substance [defined in] of claim 1, wherein:

said metal particles have an average particle size of 1 μm or smaller.

4. (Amended) The composite substance [defined in] of claim 1, wherein:

the [content of said] solvent [is] comprises 2 to 100 parts by weight [units] of the composite substance relative to 100 parts by weight [units] of said metal particles.

6. (Amended) A composite substance for forming a conductive paste, comprising:

a solvent [being] which is compatible with an organic component included in said conductive paste; and

metal-compound particles wetted by said solvent,

wherein said composite substance is prepared by mixing the solvent with undried metal-compound particles.

8. (Amended) The composite substance [defined in] of claim 6, wherein:

said metal-compound particles have an average particle size of 1μm or smaller.

9. (Amended) The composite substance [defined in] of claim 6, wherein:

the [content of said] solvent [is] comprises 2 to 100 parts by weight [units] of the composite substance relative to 100 parts by weight [units] of said metal-compound particles.

10. (Amended) The composite substance [defined in] of claim 6, [wherein: said solvent contains] further comprising an organic vehicle.

11. (Amended) A conductive paste comprising:

an organic binder;

a composite substance [including] comprising a solvent [being] which is compatible with said organic binder, and metal particles [being] wetted by said solvent; and

an organic solvent mixed with said organic binder and said composite substance

wherein said composite substance is prepared by mixing the solvent with undried metal particles.

13. (Amended) The conductive paste [defined in] of claim 11, wherein:

said metal particles have an average particle size of 1μm or smaller.

14. (Amended) The conductive paste [defined in] of claim 11, wherein:

the [content of said solvent included in said] composite substance [is] comprises 2 to 100 parts by weight of the solvent [units] relative to 100 parts by weight [units] of said metal particles.

15. (Amended) The conductive paste [defined in] of claim 11, wherein[: said solvent included in] said composite substance [contains] further comprises an organic vehicle.

16. (Amended) A conductive paste comprising:

an organic binder;

a composite substance [including] comprising a solvent [being] which is compatible with said organic binder, and metal-compound particles [being] wetted by said solvent; and

an organic solvent mixed with said organic binder and said composite substance,

wherein said composite substance is prepared by mixing the solvent with undried metal-compound particles.

18. (Amended) The conductive paste [defined in] of claim 16, wherein:

said metal-compound particles have an average particle size of 1μm or smaller.

19. (Amended) The conductive paste [defined in] of claim 16, wherein:

the [content of said solvent included in said] composite substance [is] comprises 2 to 100 parts by weight of the solvent [units] relative to 100 parts by weight [units] of said metal-compound particles.

20. (Amended) The conductive paste [defined in] of claim 16, wherein[:

said solvent included in] said composite substance [contains] further comprises an organic vehicle.

23. (Amended) A method for manufacturing a composite substance used to form a conductive paste, comprising the step of:

adding a solvent to undried metal particles [having] which have been washed with water, wherein said solvent [being] is compatible with an organic component included in said conductive paste and is incompatible with water, whereby [so that] said water is replaced by said solvent.

24. (Amended) The method [defined in] of claim 23, wherein:

said solvent is added [at a rate] in an amount of 3 to 30 parts by weight [units] relative to 100 parts by weight [units representing] of the total quantity of said metal particles.

25. (Amended) The method [defined in] of claim 23, further comprising the step of:

adding a surface active agent together with said solvent, [at a rate] in an amount of 0.05 to

10.0 parts by weight [units] relative to 100 parts by weight [units] of the entire quantity of said metal particles.

26. (Amended) The method [defined in] of claim 25, further comprising the step of:

adding [another] a second solvent [being] which is compatible with water.

27. (Amended) The method [defined in] of claim 26, wherein:

said second solvent [being compatible with water] is added [at a rate] in an amount of 0.3 to 30 parts by weight [units] relative to 100 parts by weight [units representing] of the total quantity of said metal particles.

28. (Amended) The method [defined in] of claim 26, wherein:

said second solvent [being compatible with water] is acetone.

29. (Amended) A method for manufacturing a composite substance used to form a conductive paste, comprising the step of:

adding a solvent to undried metal-compound particles [having] which have been washed with water, wherein said solvent [being] is compatible with an organic component included in said conductive paste and incompatible with water, whereby [so that] said water is replaced by said solvent.

30. (Amended) The method [defined in] of claim 29, wherein:

said solvent is added [at a rate] in an amount of 3 to 30 parts by weight [units] relative to 100 parts by weight [units representing] of the total quantity of said metal-compound particles.

31. (Amended) The method [defined in] of claim 29, further comprising the step of:

adding a surface active agent together with said solvent, [at a rate] in an amount of 0.05 to 10.0 parts by weight [units] relative to 100 parts by weight [units] of the entire quantity of said metal-compound particles.

32. (Amended) The method [defined in] of claim 31, further comprising the step of:

adding [another] a second solvent [being] which is compatible with water.

33. (Amended) The method [defined in] of claim 32, wherein:

said second solvent [being compatible with water] is added [at a rate] in an amount of 0.3 to 30 parts by weight [units] relative to 100 parts by weight [units representing] of the total quantity of said metal-compound particles.

34. (Amended) The method [defined in] of claim 32, wherein:

said second solvent [being compatible with water] is acetone.

35. (Amended) A method for manufacturing a conductive paste, comprising the step of:

mixing an organic binder and an organic solvent with [a] the composite substance [comprising a solvent being compatible with said organic binder, and metal particles wetted by said solvent] of claim 23.

36. (Amended) The method [defined in] of claim 35, wherein:

said metal particles have an average particle size of 1 μm or smaller.

37. (Amended) The method [defined in] of claim 35, wherein:

the [content of said] solvent included in said composite substance is present in an amount of 2 to 100 parts by weight units relative to 100 parts by weight [units] of said metal particles.

38. (Amended) The method [defined in] of claim 35, wherein:

said [solvent included in said] composite substance further comprises [contains] an organic vehicle.

39. A method for manufacturing a conductive paste, comprising the step of:

mixing an organic binder and an organic solvent with [a] the composite substance [comprising a solvent being compatible with said organic binder, and metal-compound particles wetted by said solvent] of claim 29.

40. (Amended) The method [defined in] of claim 39, wherein:

said metal-compound particles have an average particle size of 1 μm or smaller.

41. (Amended) The method [defined in] of claim 39, wherein:

the [content of said] solvent included in said composite substance is present in an amount of 2 to 100 parts by weight [units] relative to 100 parts by weight [units] of said metal-compound particles.

42. (Amended) The method [defined in] of claim 39, wherein:

said [solvent included in said] composite substance [contains] further comprises an organic vehicle.--

Claims 2, 5, 7, 12, and 17 (Canceled).

Claims 43-58 (New).